SBI4U **Diagnostic Quiz: DNA Replication** **[ /17]** Name:\_\_\_\_\_\_\_\_\_\_

**1. Fill in the blanks. Give full names. [ /6]**

a) Tension is relieved ahead of the replication fork by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

b) A replication fork is prevented from reannealing due to the binding of

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ along the DNA backbone.

c) A nucleoside triphosphate is hydrolyzed into a nucleotide that attaches to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ group of the preceding nucleotide and a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_that further breaks into two individual phosphate groups.

e) Special sites on DNA where replication begins are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

f) The total number of times that a normal cell can divide is known as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**2. True or False. If the statement is false, correct it so it reads true. The sentence must be rephrased with an appropriate word or phrase. Adding ‘not’ in the sentences is not accepted.**

**[ /5]**

a) A DNA of a eukaryotic organism is linear and has 2 ends. (True/ False)

b) Okazaki fragments are only formed in lagging strands in the same direction as the overall direction of replication. (True/Flase)

b) DNA polymerases add a nucleotide to only the 5’ end of the preceding nucleotide.

(True/False)

c) Telomeres prevent essential coding sequences of DNA from being replicated.

(True/ False)

d) The shortening of DNA after each replication occurs on the lagging strand where the last RNA primer is. (True/False)

**3. Draw a replication bubble and label it with the following as many times as you like to make it a complete and effective diagram:**

replication bubble, replication fork, origin of replication, parental strand, lagging strand, leading strand, Okazaki fragments, 5’, 3’, arrows showing the direction of replication

[ /6]